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REMARKS

Claims 1-6, 10, 19-22, 24, 26-37, 39, 43, 47-54, 56-61, 67, 70, 71, 73, 78-80, 156, 179-180 and 186 have been amended by this paper and Claims 38, 62 and 178 have been cancelled by this amendment. Hence, by this paper, Claims 1-6, 10, 19-22, 24, 26-37, 39-54, 56-61, 67, 69-74, 78-80, 156-161 and 179-186 are presented for further examination.

The specific changes to the specification and the amended claims are shown in the above section entitled AMENDMENTS TO THE CLAIMS. On this set of pages, the insertions are underlined while the ~~deletions are stricken through~~.

In an Office Action mailed June 7, 2005, Claims 178-181 were objected to under 37 C.F.R. § 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. The Examiner indicated that parent claim 156 limits a cover to be "removably attached" to a disc. He indicated that Claim 178 limits the cover to be "nonintegral and attachable thereto". The Examiner stated that the removable cover is, by definition, nonintegral, and Claim 156 already limits the cover to be "attached". In response, Applicant has cancelled Claim 178 by this amendment.

The Examiner stated that Claim 179 limits the cover to be "reversibly attached" to the disc. The Examiner equates "removably" and "reversibly" as being synonymous in the case of a cover. Applicant respectfully submits that "removable" and "reversibly" are not synonymous, but are clearly distinct. For example, a cover may be reversible by removing it and then rotating it so that the surface which was previously facing away from the disc is now facing the disc, and then reattaching the cover to the disc. Thus, the removable cover is also reversible. In view of this, Applicant respectfully requests that the objection to Claim 179 be withdrawn.

The Examiner asserts that Claim 180 limits the cover to "removably" attached to the disc. The Examiner suggests that a "removable" cover is inherently "movable". By this paper, Claim 180 has been amended to clarify that the cover is "movable while attached to said disc". This would be the case where the cover is attached to the disc such as by hinges, and may be moved from a first position to a second position while continuing to be attached to the disc. In view of this, Applicant respectfully requests that the objection to Claim 180 be withdrawn.

The Examiner stated that Claim 181 limits the cover to be "hingedly" attached. The Examiner indicates that "[a] cover which is attached to a disc by means of a hinge is one which

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cannot be removed from the disc; i.e., the cover may be moved in relation to the disc (up, down, or sideways), but remains attached via the hinge.” However, Applicant submits that the Examiner is mistaken in this determination. Detachable, hinged covers are well known in numerous applications. If the Examiner’s position were correct, doors could never be removed from their hinges. In some embodiments, covers are rotated on hinges to a certain release position, at which point they may be lifted from the hinges. In other cases, hinges attached to covers that have separate release mechanisms. There is clearly no basis for the Examiner’s conclusion that simply because a cover is attached to a disc by a hinge, that it may not be removable. Accordingly, Applicant respectfully requests that the objection to Claim 181 be withdrawn.

In the Office Action mailed June 7, 2005, Claims 1-6, 10, 19-22, 24, 26-54, 56-62, 67, 69-74, 78-80, 156-161 and 178-186 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. This was asserted as a NEW MATTER rejection.

The Examiner stated that “an optical disc comprising a micron sized or any other chemically reactive feature, as recited in the amended claims, is new matter.” The Examiner stated that “the original claims did not recite a chemically reactive feature of any size.” He does note that the originally filed specification, on page 5, lines 1-2, “discloses that optical discs may have microscopic structures disposed thereon. However, this is a discussion of the background or prior art and is not a disclosure of *Applicant’s* invention.”

Applicant respectfully reminds the Examiner that an element of a claim can be included in the prior art. It is the combination of the elements as set forth in the claim that define the invention. Applicant is not suggesting that the disposition of microscopic structures on a disc by itself comprises the invention. However, the presentation of that element in combination with other elements in the claims is perfectly allowable under the patent laws. Accordingly, Applicant reserves the right to use terms such as “microscopic structures” in future possible amendments or claims in continuing applications. Furthermore, Applicant notes that at page 3, lines 27-30, the specification notes that “[t]here thus exists a need in the art for an inexpensive generic device that permits computer-driven confocal laser scanning of a microscopic sample.” Thus, it is noted that one of the inventive aspects disclosed in the application is an apparatus and method for

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accomplishing confocal laser scanning of a microscopic sample. Nevertheless, in order to advance prosecution in this case, Applicant has amended the independent claims identified above to remove the terms "microscopic structures" and "chemically reactive". Thus, Applicant respectfully submits that the rejections under 35 U.S.C. § 112, first paragraph, have been overcome.

In the Office Action mailed June 7, 2005, Claims 57 and 180-181 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

The Examiner indicated that Claim 57 limits features to be disposed between a reflective layer "or of said semi-reflective layer". By this paper, Claim 57 has been amended to indicate that "the plurality of nonoperational structures are disposed between said reflective layer and said semireflective layer." Thus, Applicant submits that Claim 57 distinctly claims the subject matter which Applicant regards as the invention.

With respect to Claim 180, Applicant has amended that claim in a manner previously described to indicate that the cover is "movable while attached to said disc." Accordingly, Applicant respectfully submits that Claim 180 now distinctly claims subject matter which Applicant regards as the invention.

With respect to Claim 181, the Examiner notes that this claim includes a limitation that the cover be "hingedly attached" to the disc; however, the parent claim 156 limits the cover to be "removably attached." The Examiner then makes the statement discussed previously with respect to the objection of Claim 180, that "[a] cover which is attached to a disc by means of a hinge is one which cannot be removed from the disc; ... ". Applicant respectfully refers to the discussion presented previously with respect to the objection of Claim 181, and asserts that a cover which is hingedly attached to a disc may also be removed from that disc. Accordingly, Applicant respectfully submits that Claim 181 also distinctly claims the subject matter which Applicant regards as the invention.

In view of the above, Applicant submits that Claims 57 and 180-181 fulfill the requirements of 35 U.S.C. § 112, second paragraph, and respectfully requests that the rejections based thereon be withdrawn.

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In the Office Action mailed June 7, 2005, the Examiner rejected Claims 1, 3, 5, 10, 18-23, 26-29, 34-36, 38, 47-48, 61-62, 67 and 70-71 under 35 U.S.C. § 102(e) as being anticipated by Demers (U.S. Publication No. 2002/0058242). Among other things, the Examiner stated that “DEMERS teaches that his CD structure may comprise a cover sealed to the disc (para. 30) ...” (emphasis added). Applicant notes that Demers, at paragraph 30, lines 3-10 discloses that “CD-array structure will preferably incorporate an optically flat cover layer transparent to the wavelength of the activating laser ...” (emphasis added).

In contrast, Applicant’s Claim 1 defines “a laser refracting cover attached to said optical disc ... wherein said cover is configured to focus an incident beam on said disc’s information layer.” Support for this language is found in the specification at least at page 57, lines 15-18, which teach:

“In this later approach, a laser-refracting member is attached to the laser-proximal side of the disc as a cover; the cover serves to refract, and thus to focus, the incident light on the disc’s reflective surface.”

The manufacturing process and the use of this cover are also described in the specification. For example, at page 65, lines 30-34, the specification indicates

“As would of course be understood, the thickness of cover 140 would have to be adjusted to account for differences in the refractive index of the chosen plastic in order to focus the laser correctly on the disc’s operational structures.”

An example of the manufacturing of laser-refracting polycarbonate covers is set forth at page 87, lines 15- page 88, line 13 of the specification. Applicant submits that the provision of such a laser refracting cover is significantly different than the use of “an optically flat cover layer transparent to the wavelength of the activating laser” as set forth in Demers. The Demers cover is specifically designed to be transparent to the wavelength of the activating laser, and thus this cover intentionally does not provide any focusing attributes. In contrast, one of the purposes of the laser refracting cover as defined in Applicant’s Claim 1 is to provide for such focusing. Accordingly, Applicant respectfully submits that the subject matter of Claim 1 is neither taught, nor suggested by the Demers reference. Accordingly, Applicant submits that Claim 1, as presented herein, defines subject matter which is patentable over the Demers reference.

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Independent Claims 22, 61, 67 and 71 also include corresponding limitations. Accordingly, Applicant submits that these independent claims also define subject matter which is patentable over Demers for at least the reasons set forth with respect to Claim 1. Furthermore, dependent Claims 3, 5, 10, 19-21, 26-29, 34-36, 47, 48, and 70 each depend from one of the above-identified independent claims. Accordingly, Applicant respectfully submits that each of these dependent claims define subject matter which is patentable over Demers for at least the reasons set forth above with respect to Claim 1.

In the Office Action mailed June 7, 2005, Claims 1-6, 10, 19-22, 24, 26-39, 47-48, 61-62, 67, 69-74, 78-80, 156-161 and 186 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Demers, as applied to Claims 1, 3, 5, 10, 19-22, 26-29, 34-36, 38, 47-48, 61-62, 67, 70-71 above, in view of the Decausatis, et al. (U.S. Patent No. 5,872,723, hereinafter "Decausatis").

Applicant submits that Decausatis does not add any further teaching or suggestion with respect to at least the feature of "a laser refracting cover attached to said optical disc ... wherein said cover is configured to focus an incident beam on said disc's information layer." (see, e.g., Claim 1) Accordingly, Applicant submits that Decausatis, even in combination with Demers, neither teaches nor would have made obvious the subject matter of Claim 1. Furthermore, Applicant notes that independent Claims 78, 79, and 156 include limitations directed to the laser refracting cover similar to those of Claim 1. Accordingly, for at least the reasons set forth with reference to Claim 1, Applicant respectfully submits that independent Claims 78, 79, and 156 also define subject matter which is patentable over Demers and Decausatis, taken alone or in combination. Further, since dependent Claims 2, 4, 6, 24, 30-33, 37, 39, 69, 72-74, 78-80, 156-161, and 186 each depend from independent claims that include at least the limitation directed to the laser refracting cover, Applicant submits that these dependent claims also define subject matter which is patentable over Demers and Decausatis, alone or in combination, for at least the reasons set forth above.

In the Office Action mailed June 7, 2005, Claims 49-54 and 56-60 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Demers in view of Decausatis as applied to Claims 1-6, 10, 19-22, 24, 26-39, 47-48, 61-62, 67, 69-74, 78-80, 156-161 and 186 above, and further in view of Moriya (U.S. Patent No. 5,878,018).

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Applicant submits that independent Claim 49 includes, among other features, the feature of:

“a laser refracting cover attached to said optical disc such that said cover rotates with the rotation of said optical disc, wherein said cover is configured to focus an incident beam on said reflective layer or said additional reflective layer.”

As was discussed above, neither Demers nor Decausatis, alone or in combination, teach or suggest such a limitation, and certainly no teaching or suggestion of such is provided which would have made obvious this feature in combination with the other features of independent Claim 49. Claims 50-54 and 56-60 each depend from Claim 49. Accordingly, Applicant respectfully submits that Claims 49-54 and 56-60 define subject matter which is patentable over Demers, Decausatis and Moriya, taken alone or in combination.

In the Office Action mailed June 7, 2005, Claims 38-41, 43-46, 156, 158, 160, 178-179 and 182-185 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Demers as applied to Claims 1, 3, 5, 10, 19-22, 26-29, 34-36, 38, 47-48, 61-62, 67, 70-71 above, in view of Neuner (WO 9705609).

With regard to Demers, the Examiner states that “DEMERS teaches that his optical disc may comprise a protective cover through which a laser may be focused, ...” However, to the extent that the Examiner is suggesting that the cover is used for focusing, Applicant respectfully disagrees. As was pointed out previously, Demers discloses a CD-array structure which “will preferably incorporate an optically flat cover layer transparent to the wavelength of the activating laser ...” (Col. 30, lines 2-4). This cover layer does not comprise a “laser refracting cover” as defined in Applicant’s independent claims, but instead comprises a layer which is transparent to the wavelength of the activating laser, and thus is not configured to focus an incident beam on layer or structure.

The Examiner states that Neuner

“teaches a removable protective cover for an optical disc which is made of polycarbonate or other “suitable” material, and aids in focusing light on the disc (p. 6, line 12- p. 8, line 14).” (emphasis added)

Applicant notes that Neuner, at page 6, lines 4-7, states:

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“The data is read optically from the optical disc 40 through the transmitting disc 15, thus the material must not interfere with the reading of the data on the optical disc 40.”

The reference goes on at page 6, lines 13-16 to state that:

“The transmitting disc 15 preferably has optical properties that minimize the distortion and attenuation of encoded light signals which pass through the transmitting disc.” (emphasis added)

Thus, Applicant submits that Neuner is also directed to a cover which is configured to allow light to pass through, with a minimal amount of distortion and attenuation. Certainly, there is neither any teaching nor any suggestion in Neuner of a cover which is configured as a “laser refracting cover” which “is configured to focus an incident beam on” a layer or structure on the disc, as is defined in Applicant’s independent claims, including independent Claim 156. In fact, the Examiner states that:

“It would have been obvious to one of ordinary skill in the art at the time of invention to have used a removable cover made of polycarbonate or other suitable material, such as polystyrene, similar to that of NEUNER, as the protective cover on the disc of DEMERS where the motivation would have been to use a cover which can be aligned to the disc so the cover does not block light transmission to the disc itself, as taught by NEUNER (Abstract).” (emphasis added)

Applicant agrees that Neuner and Demers are directed to cover structures which do not block light transmission to the disc itself. In contrast, Applicant’s claims are directed to “A laser refracting cover attached to said optical discs ... wherein said cover is configured to focus an incident beam on” a layer or structure. Similar limitations are included in each of Applicant’s independent claims. Accordingly, Applicant respectfully submits that there is neither any teaching nor suggestion in Demers or Neuner, alone or in combination, which would have made obvious the subject matter of the claims presented in the instant application.

In the Office Action mailed June 7, 2005, Claims 157, 159 and 161 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Demers in view of Neuner and further in view of Decausatis, et al. Since Claims 157, 159 and 161 each depend from an independent claim which

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was not the basis for this rejection, Applicant submits that these claims also define patentable subject matter for at least the reasons set forth above in connection with their respective independent claims.

Applicant notes that a number of the claims presented in this paper have been amended to make reference to “nonoperational structures”. In previous Office Actions, the Examiner has suggested that the term “nonoperational structure” may, for some reason, be limited to analyte-specific signal elements. However, Applicant submits that this term is not so limited. Applicant refers to page 20, lines 3-11 of the specification which states:

“As used herein, the term “nonoperational structure” means any structure disposed on a surface or within an optical disc that is capable of producing a signal when the disc is read by an optical disc reader, the signal of which is not required, however (although possibly useful) for drive operation during reading. Nonoperational structures include, for example, analyte-specific signal elements as are described immediately below.” (emphasis added)

Applicant submits that the above definition makes it clear that nonoperational structures are not limited to analyte-specific signal elements. They include “any structure disposed on a surface or within an optical disc that is capable of producing a signal ...”. Applicant submits that the interpretation of this definition as limiting “nonoperational structures” to the elements given in the example which are indicated as being included in the defined terms, would be inappropriate.

The specification goes on, at page 20, lines 12-15, to further describe those nonoperational structures which do comprise analyte-specific signal elements. The specification states:

“As used herein, the term “analyte-specific signal element” refers to any nonoperational structure that may be used to signal the presence of a specific analyte in a sample applied to an optical disc.”

Thus, analyte-specific elements are a sub group of nonoperational structures, but the term nonoperational structure clearly covers not only those analyte-specific signal elements, but “any structure disposed on a surface or within an optical disc that is capable of producing a signal when the disc is read by an optical disc reader”, as indicated above.

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In view of the above, Applicant submits that the term "nonoperational structure" is appropriate to define subject matter not restricted out of the claims being examined.

In view of the foregoing, Applicant respectfully submits that Claims 1-6, 10, 19-22, 24, 26-37, 39-54, 56-61, 67, 69-74, 78-80, 156-161 and 171-186, as presented herein, define subject matter that is patentable over the art of record. Accordingly, Applicant respectfully submits that these claims are now in condition for immediate allowance and such prompt allowance of the same is respectfully requested.

CONCLUSION

The Applicant has endeavored to address all of the concerns of the Examiner in view of the recent Office Action directed to the above-identified application. Accordingly, amendments to the claims, the reasons therefor and arguments in support of the patentability of the pending claims are presented above.

Any claim amendments which are not specifically discussed in the above remarks are not made for patentability purposes, and it is believed that the claims would satisfy the statutory requirements for patentability without the entry of such amendments. Rather, these amendments have only been made to increase claim readability, to improve grammar, and to reduce the time and effort required of those in the art to clearly understand the scope of the claim language. Any new claims presented above are of course intended to avoid the prior art, but are not intended as replacements or substitutes for any cancelled claims. They are simply additional specific statements of inventive concepts described in the application as originally filed.

In light of the above amendments and remarks, reconsideration and withdrawal of the outstanding rejections is specifically requested. If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully requested to initiate the same with the undersigned.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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